

WHAT IS CLAIMED IS

1. A ceramic catalyst carrier with a honeycomb structure comprising:
a plurality of cell passages integrally formed with the ceramic catalyst
5 carrier by extrusion, said cell passages having a cross-sectional shape of circle;
a plurality of partition walls each separating a cell; and
a catalyst coated on the inner surface of the cell passages,
wherein the cells comprising said cell passage and said catalyst are integrally
formed with the catalyst carrier.
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2. The ceramic catalyst carrier of claim 1, wherein the cells are separated by
equal spaces in a row and wherein each said row is positioned with
displacement of one radius of said cell to other rows which are adjacent thereto.
- 15 3. The ceramic catalyst carrier of claim 1, wherein the cells form a
honeycomb structure, wherein cells are separated by equal spaces in a row and
wherein each said row is positioned with vertical displacement of about
 $(a+t)\sin 60^\circ$, wherein "a" is the interior diameter of the cell, and "t" is the
minimum thickness of the partition wall.
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4. The ceramic catalyst carrier of claim 3 wherein the thinnest portion of the
partition wall has a thickness of not more than $165\ \mu\text{m}$.
5. The ceramic catalyst carrier of claim 1 having a cell density of more than
25 400 cpsi, wherein the thinnest portion of the partition wall has a thickness of not
more than $165\ \mu\text{m}$.
6. A ceramic catalyst carrier comprising:
a plurality of cell passages arranged in a honeycomb structure, said cell
30 passages having an opening with a substantially circular cross-section;
walls separating the cell passages, wherein said walls are formed from
extruded ceramic; and

a catalyst coating covering the interior cell walls of the cell passage and formed during the extrusion process.

7. A method for forming a ceramic catalyst carrier comprising:

5 extruding a ceramic material and catalyst layer material in a honeycomb structure, wherein the honeycomb structure comprises cell passages and the passages have a substantially circular cross-section.

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